

AMENDMENTS TO THE CLAIMS

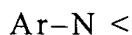
Please amend the claims as shown below. The pending claims are as follows.

1. (Canceled)
2. (Withdrawn) A polyester polymerization catalyst comprising
at least one metal-containing component selected from the group consisting of metals and metal compounds, wherein the metal-containing component contains no antimony or germanium; and
an organic compound component,
wherein an activity parameter (AP) of the catalyst fulfills Formula (1) shown below,
$$(1) \text{ AP (min)} < 2T(\text{min})$$
wherein AP is a time (min) required for polymerization using the catalyst at 275°C under reduced pressure of 0.1 Torr to obtain a polyethylene terephthalate (PET) having intrinsic viscosity of 0.5 dl/g and T is an AP observed when using antimony trioxide as a catalyst with an added amount of antimony trioxide being 0.05 mol% as antimony atom based on an acid component in the PET and,
wherein the PET polymerized using the catalyst has a thermal stability degree (TD) which fulfills Formula (2) shown below without removing or inactivating said catalyst,
$$(2) \text{ TD (\%)} < 25$$
wherein TD is a % reduction in the intrinsic viscosity after keeping 1g of PET, whose initial intrinsic viscosity was 0.6 dl/g, in a glass tube at melt state under a nitrogen atmosphere at 300°C for 2 hours, after drying the PET at 130°C for 12 hours in vacuum.
3. (Withdrawn) The polyester polymerization catalyst according to Claim 2 wherein said organic compound component is at least one compound containing at least one moiety selected from the group consisting of moieties represented by Formula 1 and moieties represented by Formula 2:

(Formula 1)



(Formula 2)



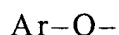
wherein Ar represents an aryl group.

4. (Currently amended) A ~~polyester~~ polymerization catalyst for polyester production comprising:

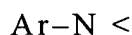
at least one metal-containing component selected from the group consisting of metals and metal compounds, wherein said metal-containing component comprises no antimony or germanium; and

an organic compound component, wherein said organic compound component is at least one compound containing at least one moiety selected from the group consisting of moieties represented by Formula 1 and moieties represented by Formula 2:

(Formula 1)



(Formula 2)



wherein Ar represents an aryl group.

5. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of an alkali metal, an alkaline earth metal, and compounds thereof.

6. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 5 wherein said alkali metal or alkaline earth metal is at least one selected from the group consisting of Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr and Ba.

7. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Al, Ga, Tl, Pb, Bi and compounds thereof.

8. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Tl, Pb, Bi and compounds thereof.
9. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Cr, Ni, Mo, Tc, Re and compounds thereof.
10. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Cr, Ni and compounds thereof.
11. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Sc, Y, Zr, Hf, V and compounds thereof.
12. (Canceled)
13. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Ru, Rh, Pd, Os, Ir, Pt and compounds thereof.
14. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Ru, Pd and compounds thereof.
15. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Cu, Ag, Au, Cd, Hg and compounds thereof.

16. (Canceled)

17. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of lanthanide metals and compounds thereof.

18. (Canceled)

19. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of In and a compound thereof.

20. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Mn, Co, Zn and compounds thereof.

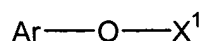
21. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Fe, Nb, Ta, W and compounds thereof.

22. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Fe and a compound thereof.

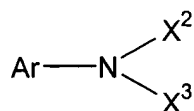
23. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein said metal-containing component is at least one selected from the group consisting of Si, Te, B and compounds thereof.

24. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 4 wherein the moieties represented by Formula 1 are moieties represented by Formula 3, and the moieties represented by Formula 2 are moieties represented by Formula 4:

(Formula 3)



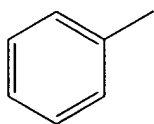
(Formula 4)



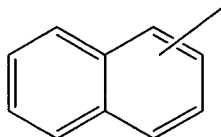
wherein Ar represents an aryl group, each of X^1 , X^2 and X^3 independently represents hydrogen, a hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group.

25. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein Ar is selected from the group consisting of moieties represented by Formulae 5 to 12:

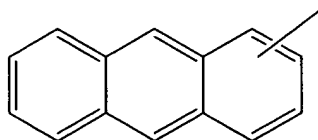
(Formula 5)



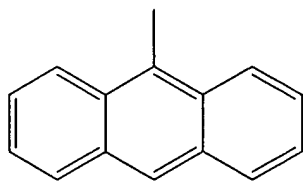
(Formula 6)



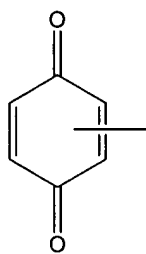
(Formula 7)



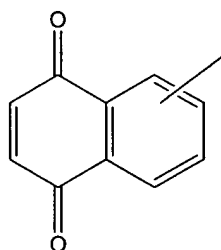
(Formula 8)



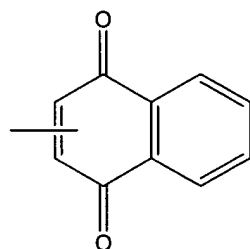
(Formula 9)



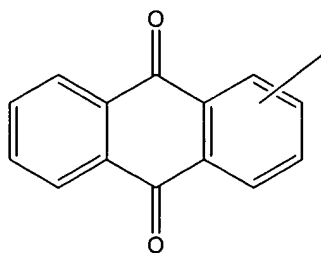
(Formula 10)



(Formula 11)

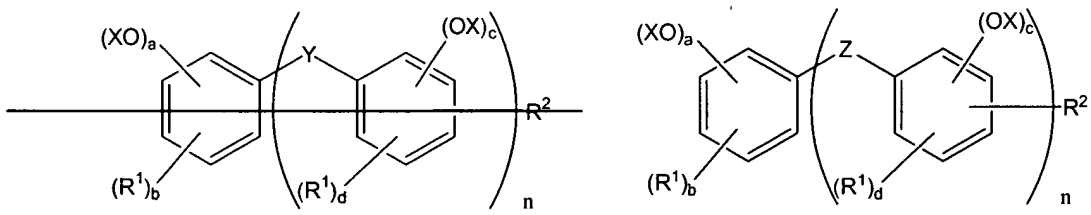


(Formula 12)

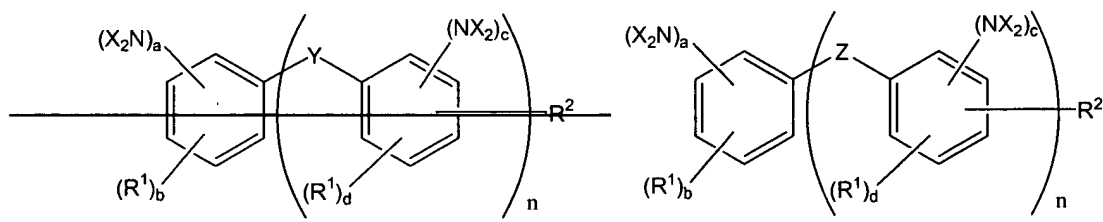


26. (Currently amended) The ~~polyester~~ polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a linear ~~phenol~~ compound of Formula 13, a linear ~~aniline~~ compound of Formula 14 and derivatives thereof:

(Formula 13)



(Formula 14)

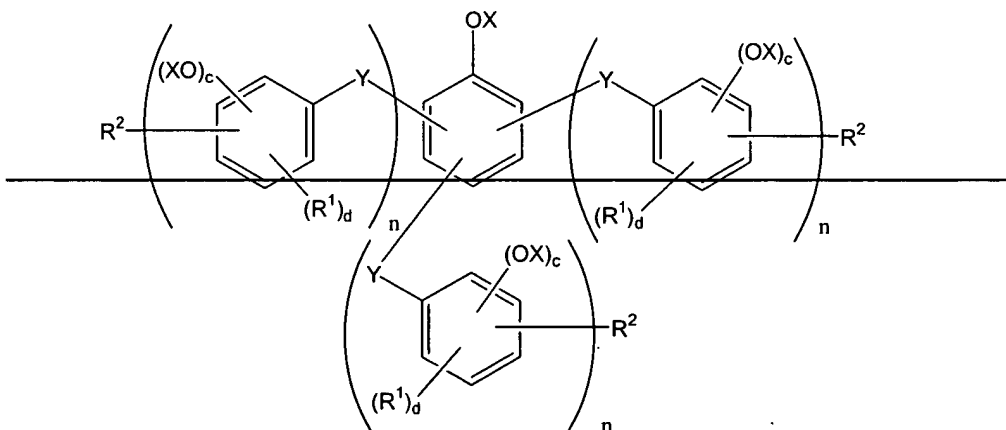


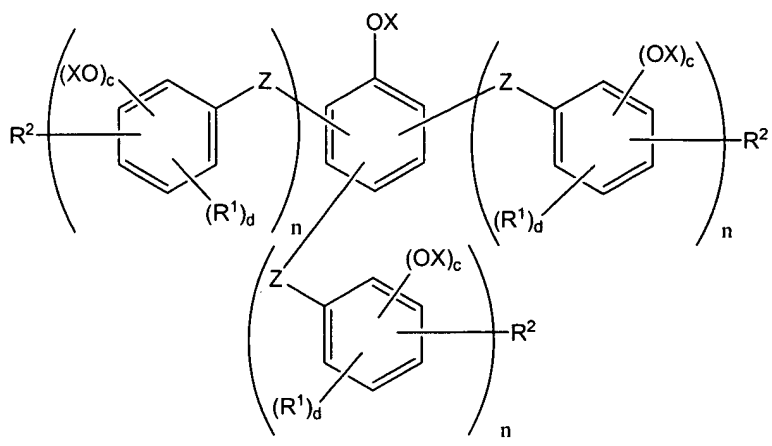
wherein each R^1 is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a

nitro group, a cyano group or a thiocyno group, each R^2 is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbly group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbly group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbly group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbly group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbly group, each $\forall \text{ } \underline{Z}$ is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group, - (alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, n represents an integer of 1 to 100, each of a and c is an integer of 1 to 3, each of b and d is 0 or an integer of 1 to 3, provided that $1 \leq a+b \leq 5$, $1 \leq c+d \leq 4$, and each d is the same or different, and derivatives thereof.

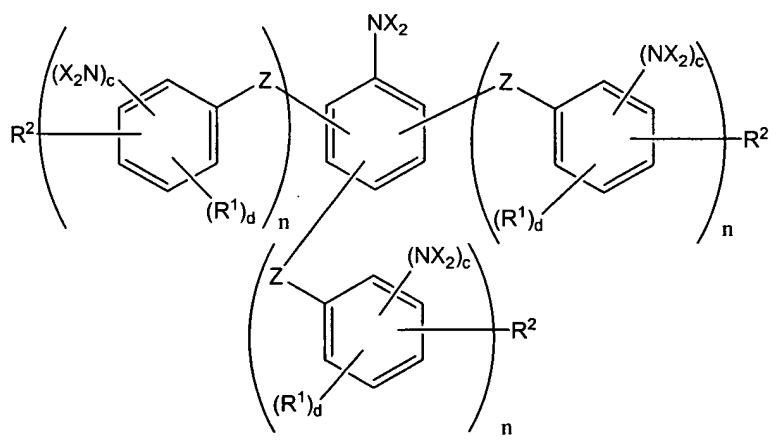
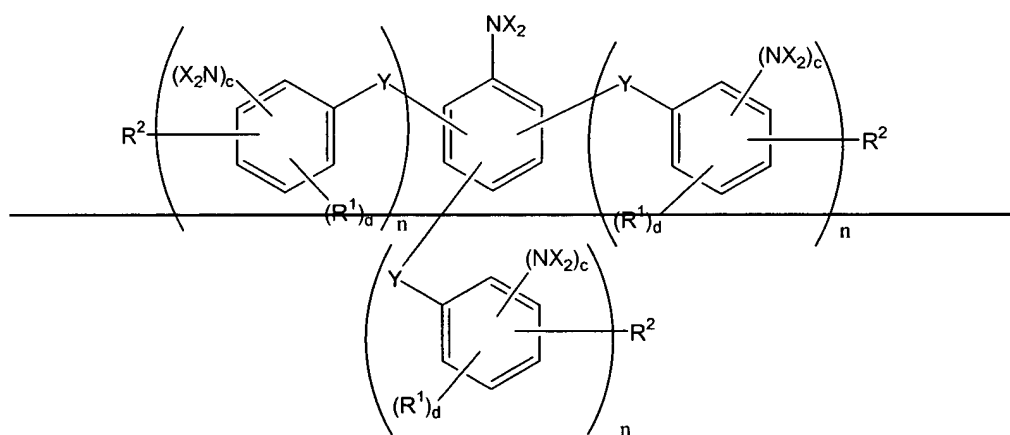
27. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a branched linear ~~phenol~~ compound represented by Formula 15 and a branched linear ~~aniline~~ compound represented by Formula 16 and derivatives thereof:

(Formula 15)





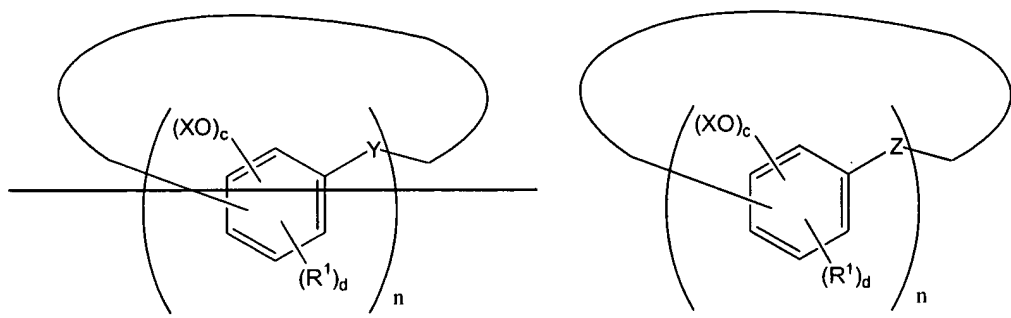
(Formula 16)



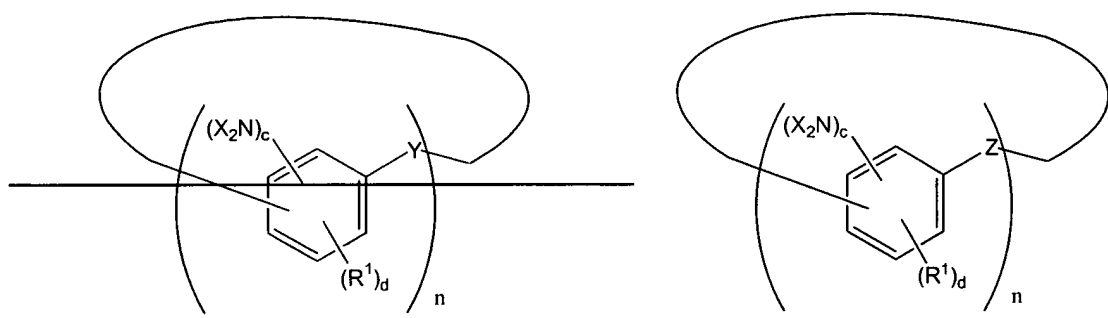
wherein each R^1 is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyano group, each R^2 is the same or different and represents hydrogen, a C_1 - C_{20} C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyano group, each X is the same or different and represents hydrogen, a C_1 - C_{20} ~~hydrocarbon~~ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} ~~hydrocarbon~~ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each $\forall Z$ is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group, -(alkylene)-O-, -(alkylene) S-, -O-, -S-, -SO₂-, -CO- or -COO-, each n is the same or different and represents an integer of 1 to 100, each c is the same or different and represents an integer of 1 to 3, each d is the same or different and represents 0 or an integer of 1 to 3, provided that $1 \leq c+d \leq 4$, and derivatives thereof.

28. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a cyclic ~~phenol~~ compound represented by Formula 17 and a cyclic ~~aniline~~ compound represented by Formula 18 and derivatives thereof:

(Formula 17)



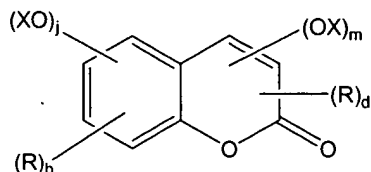
(Formula 18)



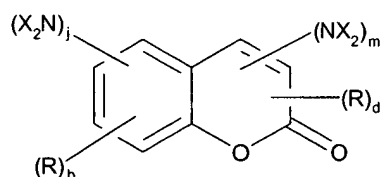
wherein each R^1 is the same or different and represents a C_1 - C_{20} hydrocarbonyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbonyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbonyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbonyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbonyl group, each Y Z is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group, -(alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, n represents an integer of 1 to 100, c represents an integer of 1 to 3, d represents 0 or an integer of 1 to 3, provided that $1 \leq c+d \leq 4$, and each d is the same or different, and derivatives thereof.

29. (Currently amended) The polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a coumarine derivative represented by Formula 19 or 20 and a chromone derivative represented by Formula 21 or 22:

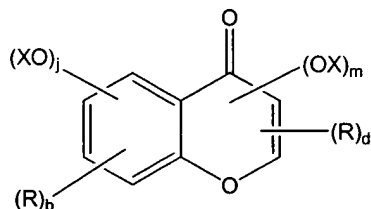
(Formula 19)



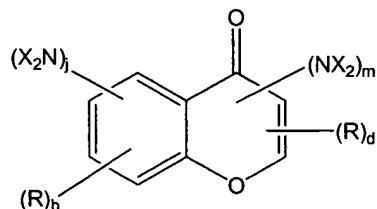
(Formula 20)



(Formula 21)



(Formula 22)

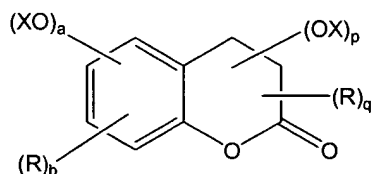


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an

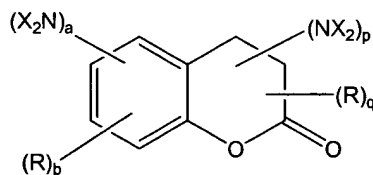
alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ~~ether group containing~~ ether-group-containing hydrocarbyl group, each of j and b is 0 or an integer of 1 to 3, each of m and d is 0 or an integer of 1 to 2, provided that $0 \leq j+b \leq 4$, $0 \leq m+d \leq 2$ and $1 \leq j+m \leq 5$, and derivatives thereof.

30. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a dihydrocoumarine derivative represented by Formula 23 or 24, a chromanone derivative represented by Formula 25 or 26, and an isochromanone derivative represented by Formula 27 or 28:

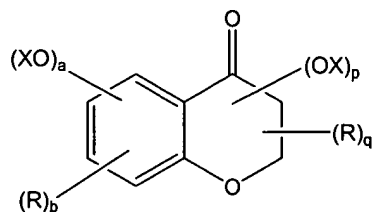
(Formula 23)



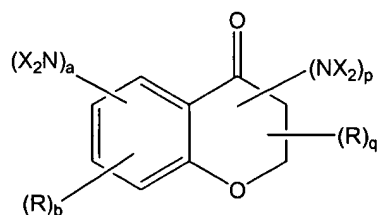
(Formula 24)



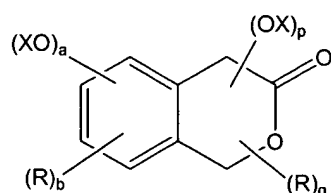
(Formula 25)



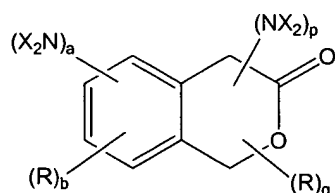
(Formula 26)



(Formula 27)



(Formula 28)

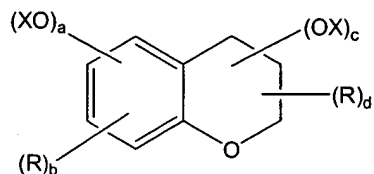


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, a is an integer of 1 to 3, b is 0 or an integer of 1 to 3, and each of p and q is 0 or an integer of 1 to 2, provided that 1 ≤ a+b ≤ 4 and 0 ≤ p+q ≤ 2, and derivatives thereof.

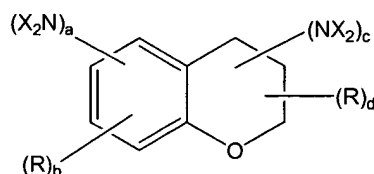
31. (Currently amended) The ~~polyester~~ polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of

the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a chroman derivative represented by Formula 29 or 30 and an isochroman derivative represented by Formula 31 or 32:

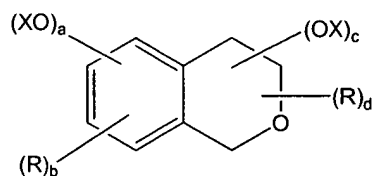
(Formula 29)



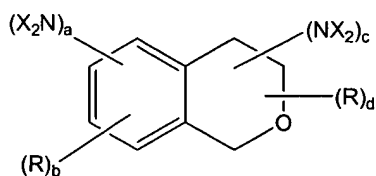
(Formula 30)



(Formula 31)



(Formula 32)

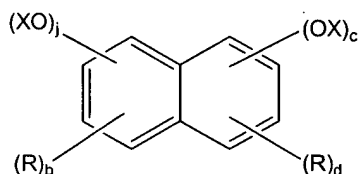


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or

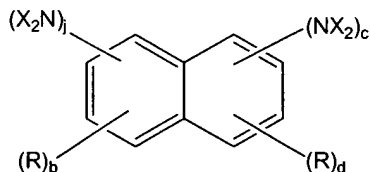
an ether-group-containing hydrocarbyl group, a is an integer of 1 to 3, b is 0 or an integer of 1 to 3, each of c and d is 0 or an integer of 1 to 3, provided that $1 \leq a+b \leq 4$ and $0 \leq c+d \leq 3$, and derivatives thereof.

32. (Currently amended) The polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a naphthalene derivative represented by Formula 33 or 34 and a bisnaphthyl derivative represented by Formula 35 or 36:

(Formula 33)

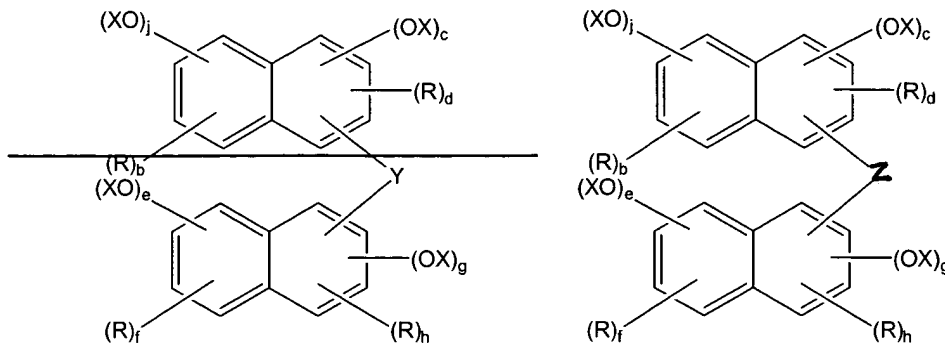


(Formula 34)

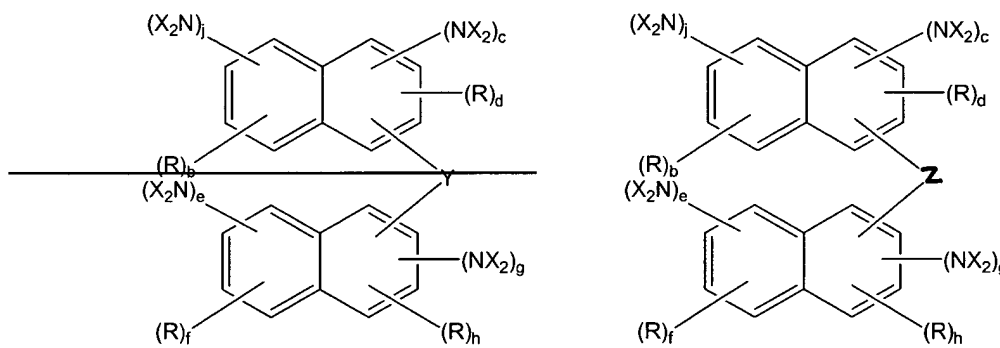


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of j, b, c and d is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 4$ and $1 \leq j+c \leq 6$,

(Formula 35)



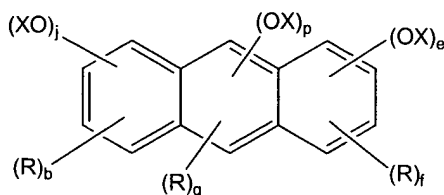
(Formula 36)



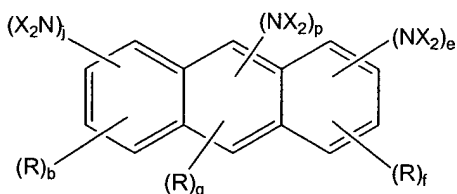
wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, ∇ \underline{Z} represents a direct bond, a C₁-C₁₀ alkylene group, -(alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, each of j, b, c, d, e, f, g and h is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 3$, $0 \leq e+f \leq 4$, $0 \leq g+h \leq 3$ and $1 \leq j+c+e+g \leq 12$, and derivatives thereof.

33. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of an anthracene derivative represented by Formula 37 or 38:

(Formula 37)



(Formula 38)

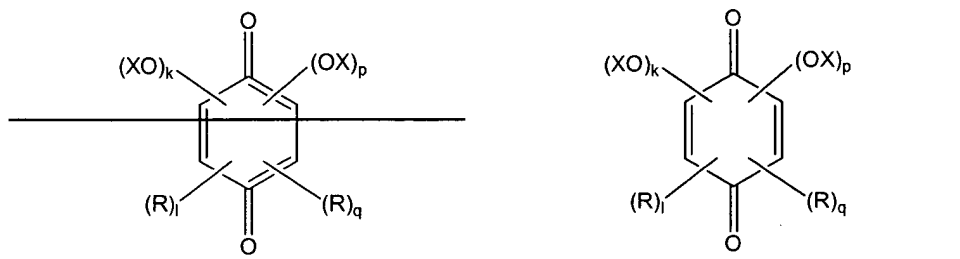


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of j, b, e and f is 0 or an integer of 1 to 3, each of p and q is 0 or an integer of 1 to 2, provided that $0 \leq j+b \leq 4$, $0 \leq p+q \leq 2$, $0 \leq e+f \leq 4$ and $1 \leq j+p+e \leq 8$.

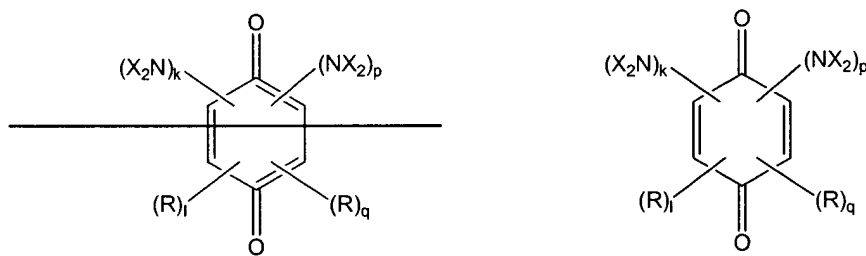
34. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a

compound selected from the group consisting of a benzoquinone derivative represented by Formula 39 or 40:

(Formula 39)



(Formula 40)

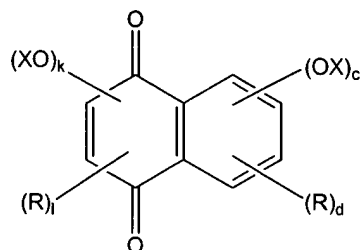


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of k, l, p and q is 0 or an integer of 1 to 2, provided that $0 \leq k+l \leq 2$, $0 \leq p+q \leq 2$ and $1 \leq k+p \leq 4$.

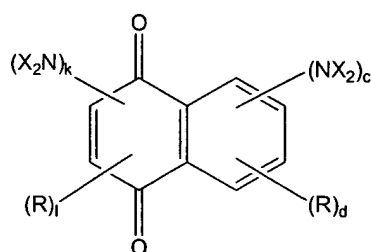
35. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a

compound selected from the group consisting of a naphthoquinone derivative represented by Formula 41 or 42:

(Formula 41)



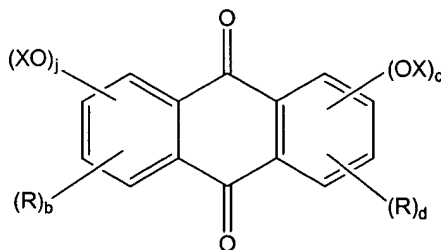
(Formula 42)



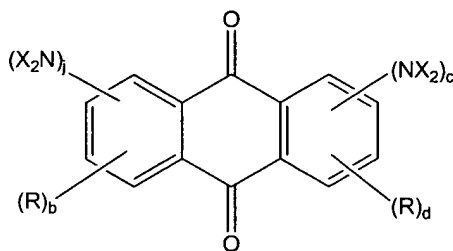
wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyano group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of k and l is 0 or an integer of 1 to 2, each of c and d is 0 or an integer of 1 to 3, provided that $0 \leq k+l \leq 2$, $0 \leq c+d \leq 4$ and $1 \leq k+c \leq 5$.

36. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of an anthraquinone derivative represented by Formula 43 or 44:

(Formula 43)



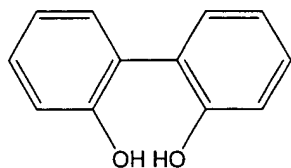
(Formula 44)



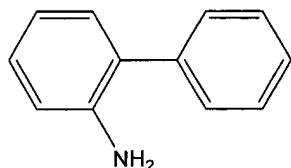
wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of j, b, c and d is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 4$ and $1 \leq j+c \leq 6$.

37. (Currently amended) The polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a 2,2'-bisphenol represented by Formula 45 and a 2-aminobiphenyl represented by Formula 46:

(Formula 45)



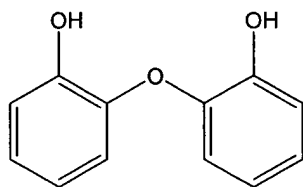
(Formula 46)



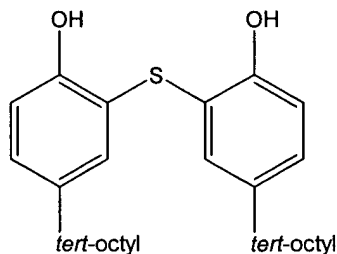
and derivatives thereof.

38. (Currently amended) The ~~polyester~~ polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a 2,2'-dihydroxydiphenylether represented by Formula 47, a 2,2'-thiobis(4-*t*-octylphenol) represented by Formula 48 and a 2,2'-methylenebis(6-*t*-butyl-*p*-cresol) represented by Formula 49:

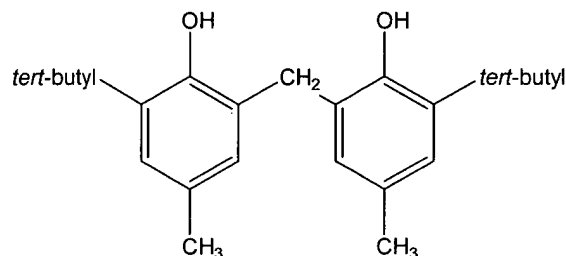
(Formula 47)



(Formula 48)



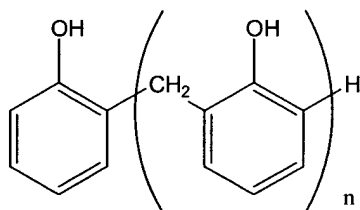
(Formula 49)



and derivatives thereof.

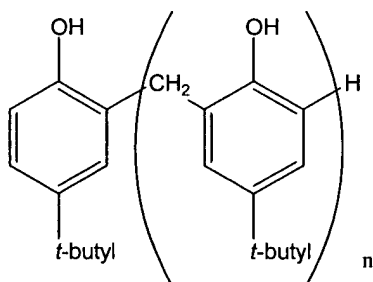
39. (Currently amended) The polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a methylene-bridged linear phenol compound represented by Formula 50 (mixture of dimer to 100-mer) and a methylene-bridged linear p-t-butylphenol compound represented by Formula 51 (mixture of dimer to 100-mer):

(Formula 50)



wherein n is an integer of 1 to 99,

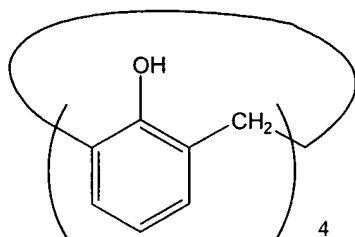
(Formula 51)



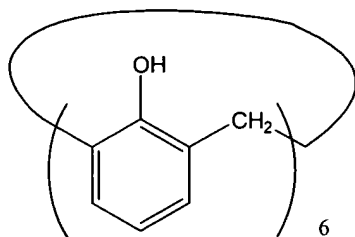
wherein n is an integer of 1 to 99, and derivatives thereof.

40. (Currently amended) The polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a Calix [4] arene represented by Formula 52, a Calix [6] arene represented by Formula 53, a Calix [8] arene represented by Formula 54, a p-t-butyl Calix [4] arene represented by Formula 55, a p-t-butyl Calix [6] arene represented by Formula 56 and a p-t-butyl Calix [8] arene represented by Formula 57:

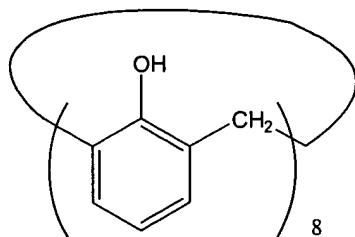
(Formula 52)



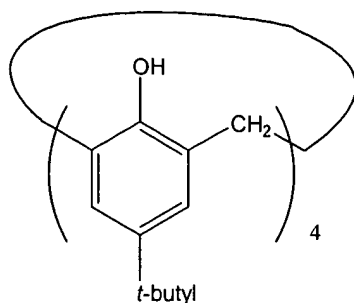
(Formula 53)



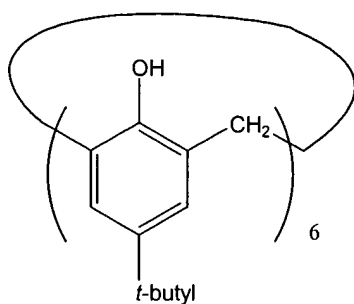
(Formula 54)



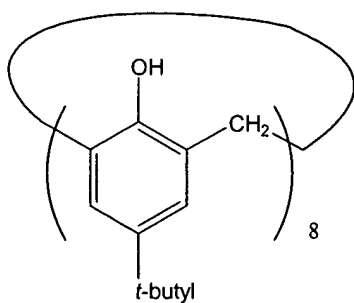
(Formula 55)



(Formula 56)



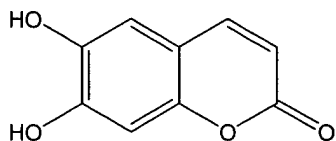
(Formula 57)



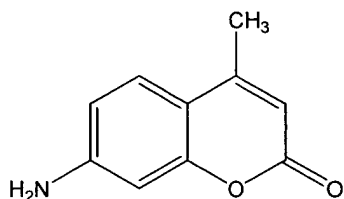
and derivatives thereof.

41. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of an esculetin represented by Formula 58 and a 7-amino-4-methylcoumarine represented by Formula 59:

(Formula 58)



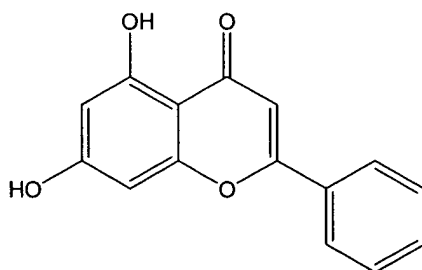
(Formula 59)



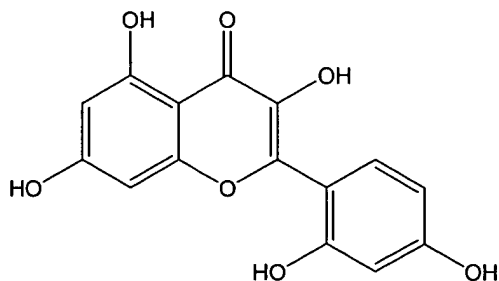
and derivatives thereof.

42. (Currently amended) The polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a chrysin represented by Formula 60, a morin represented by Formula 61 and a 2-aminochromone represented by Formula 62:

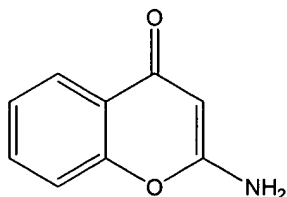
(Formula 60)



(Formula 61)



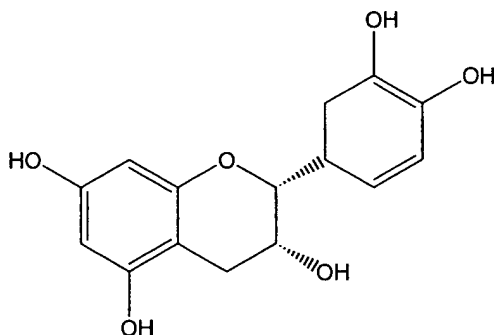
(Formula 62)



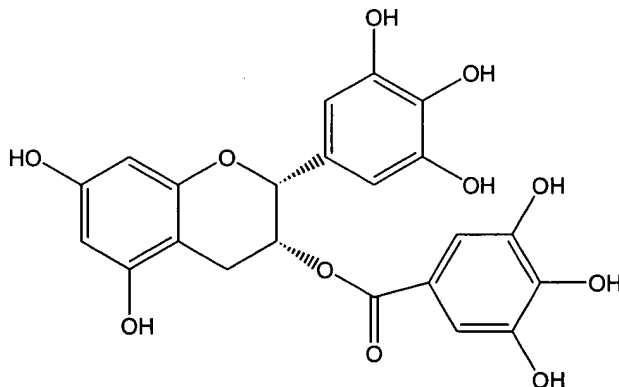
and derivatives thereof.

43. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 ~~and the moieties represented by said Formula 4~~ is a compound selected from the group consisting of an epicatechin represented by Formula 63 and an epigallocatechin gallate represented by Formula 64:

(Formula 63)



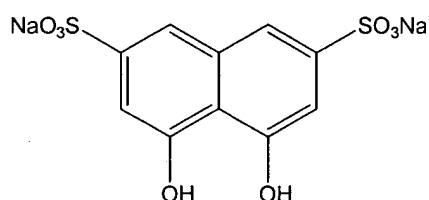
(Formula 64)



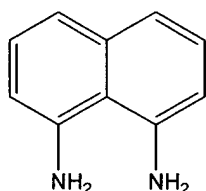
and derivatives thereof.

44. (Currently amended) The polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a disodium 4,5-dihydroxynaphthalene-2,7-disulfonate represented by Formula 65, a 1,8-diaminonaphthalene represented by Formula 66, a naphthol AS represented by Formula 67, a 1,1'-bi-2-naphthol represented by Formula 68 and a 1,1'-binaphthyl-2,2'-diamine represented by Formula 69:

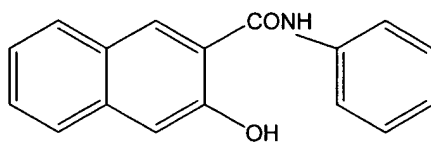
(Formula 65)



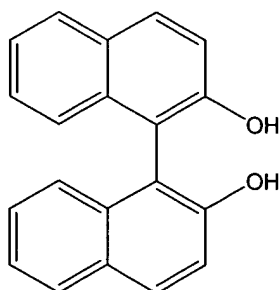
(Formula 66)



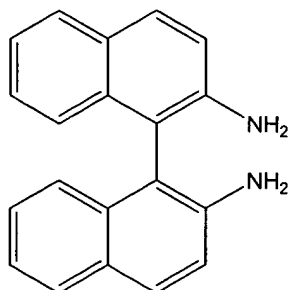
(Formula 67)



(Formula 68)



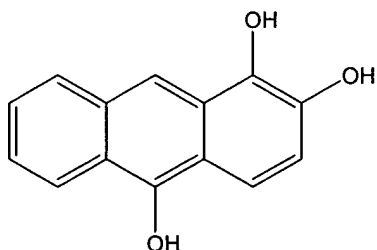
(Formula 69)



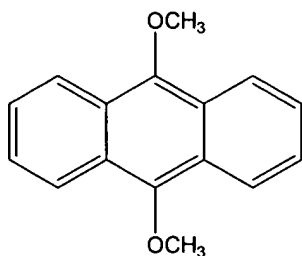
and derivatives thereof.

45. (Currently amended) The polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of an anthrarobin represented by Formula 70, a 9,10-dimethoxyanthracene represented by Formula 71 and a 2-aminoanthracene represented by Formula 72:

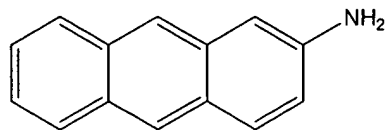
(Formula 70)



(Formula 71)



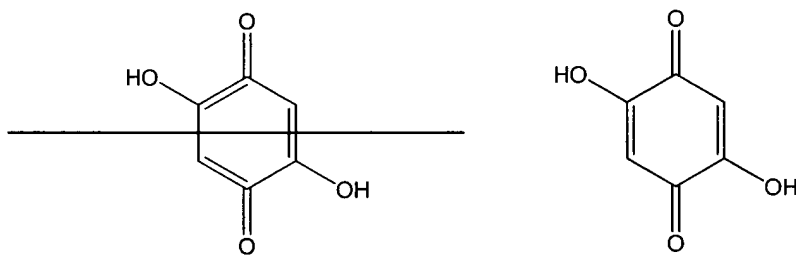
(Formula 72)



and derivatives thereof.

46. (Currently amended) The ~~polyester~~ polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a 2,5-dihydroxybenzoquinone represented by Formula 73:

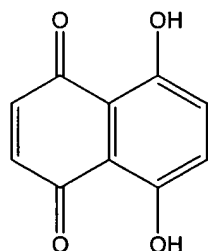
(Formula 73)



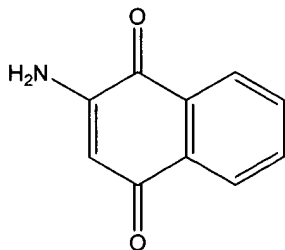
and derivatives thereof.

47. (Currently amended) The ~~polyester~~ polyester polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a 5,8-dihydroxy-1,4-naphthoquinone represented by Formula 74 and a 2-aminonaphthoquinone represented by Formula 75:

(Formula 74)



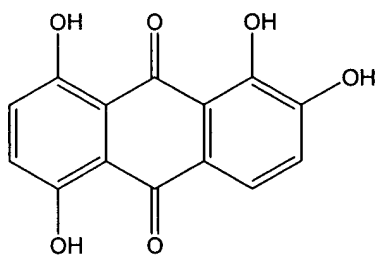
(Formula 75)



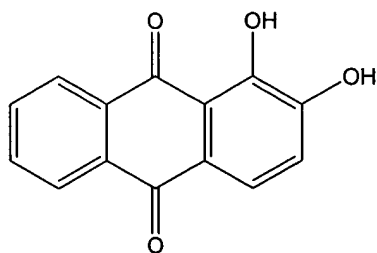
and derivatives thereof.

48. (Currently amended) The ~~polyester~~ polymerization catalyst according to Claim 24 wherein the compound containing the at least one moiety selected from the group consisting of the moieties represented by said Formula 3 and the moieties represented by said Formula 4 is a compound selected from the group consisting of a quinalizarin represented by Formula 76, ~~an~~ alizarin represented by Formula 77, a quinizarin represented by Formula 78, ~~an~~ anthrarufin represented by Formula 79, ~~an~~ emodine represented by Formula 80, a 1,4-diaminoanthraquinone represented by Formula 81, a 1,8-diamino-4,5-dihydroxyanthraquinone represented by Formula 82 and ~~an~~ acid blue 25 represented by Formula 83:

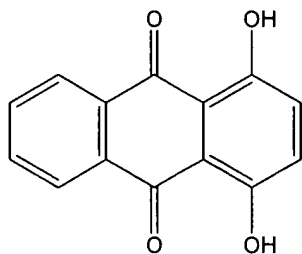
(Formula 76)



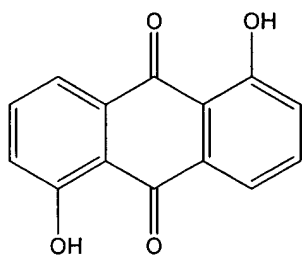
(Formula 77)



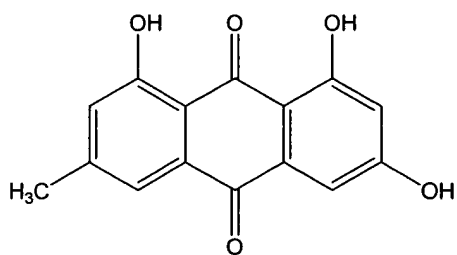
(Formula 78)



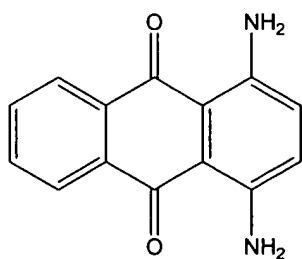
(Formula 79)



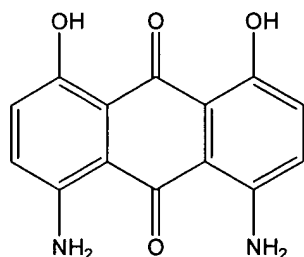
(Formula 80)



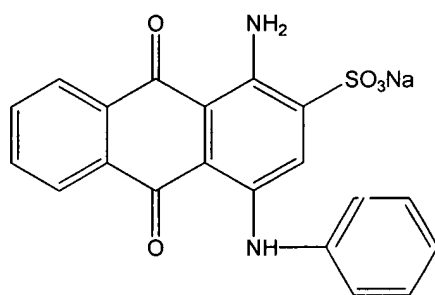
(Formula 81)



(Formula 82)



(Formula 83)



and derivatives thereof.

49. (Withdrawn) A polyester polymerization catalyst having a substantial catalytic activity and comprising:

at least one metal-containing component selected from the group consisting of metals and metal compounds, wherein the at least one metal-containing component alone has substantially no catalytic activity for a polyester polymerization; and

an organic compound component, said organic compound component alone having substantially no catalytic activity for a polyester polymerization,

wherein the combination of the metal-containing component and the organic compound component produces the substantial catalytic activity for polyester polymerization.

50 - 67. (Canceled)

68. (Withdrawn) A method for producing a polyester using the polyester polymerization catalyst according to any one of Claims 25-48.
69. (Withdrawn) A method for producing the polyester according to Claim 68, wherein the metal-containing component and organic compound component of the polyester polymerization catalyst are added at the same time.
70. (Withdrawn) A method for producing the polyester according to Claim 68, wherein the metal-containing component and an organic compound component of the polyester polymerization catalyst are added at an interval.
71. (Withdrawn) A method for producing the polyester according to Claim 68, wherein a dicarboxylic acid is reacted with a glycol in the presence of the polyester polymerization catalyst, and the dicarboxylic acid consists mainly of at least one of terephthalic acid and naphthalene dicarboxylic acid.
72. (Withdrawn) A method for producing the polyester according to Claim 68 or 69, wherein the glycol consists mainly of at least one of ethylene glycol, 1,3-propanediol, 1,4-butanediol, and 1,4-cyclohexane dimethanol.
73. (Withdrawn) A method for producing polyethylene naphthalate using the polyester polymerization catalyst according to any one of Claims 24-48.
74. (Withdrawn) A method for producing polybutylene naphthalate using the polyester polymerization catalyst according to any one of Claims 24-48.
75. (Withdrawn) A method for producing polybutylene naphthalate using the polyester polymerization catalyst according to any one of Claims 24-48.

76. (Withdrawn) A method for producing cyclohexane dimethanol-copolymerized polyethylene naphthalate using the polyester polymerization catalyst according to any one of Claims 24-48.